

Communication Patterns of the Long Bedian Community: Implications for the Development of a Telecentre

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Abstract. In an attempt to close the digital gap between the developed urban and the technologically impoverished rural communities, telecentres have been identified as one of the most acknowledged solution. A baseline study was done on the Long Bedian community to determine its communication pattern taking into consideration certain recommended steps. Findings from the study revealed that the Long Bedian community was deprived of the modern ICT benefits and there is a distinct information gap between the Long Bedian community and the urban community. Implication of the findings for the development of a telecentre is discussed.

Keywords. e-Bedian, Communication pattern, Baseline study, Telecentre.

1. Introduction

Malaysia, particularly Sarawak, had in recent years taken a leap in equipping herself to become a knowledge-based state and country. The government through many initiatives have looked into this matter to seriously reduce, if possible eliminate, the digital gap that exists between the developed urban and the technologically impoverished rural communities.

e-Bario, a successful research showcase of University Malaysia Sarawak, is one of the leading examples in Malaysia of such an attempt to bridge the digital gap and to achieve sustainable human development through the introduction of information and communication technology (ICT). According to Harris, Bala, Songan, Khoo and Trang (2001), the World Bank had introduced a systematic approach to the application of ICT to meet the needs and bridge the digital gap of the rural community. The following are the steps to be taken in this systematic approach:

1. *"Identify the needs and priorities of the rural communities for such areas as agriculture, education, commerce, natural resource management, health, etc.*
2. *Determine the types of information needed to help meet those needs, including information gathered from the rural population and transmitted to policy-makers and project designers, and information shared among rural communities.*
3. *Determine the gaps between the information currently available and what is needed.*
4. *Determine how ICT can close those gaps and build valuable synergies by mobilising information across sectors."*

(Harris, et. al., 2001: 274)

Harris, et al. (2001) further claimed that telecentres were being hailed in many countries in Africa, Latin America, and Asia as the new solution to development problems to provide ICT access and close the digital gap. Harris, et al. (2001: 275) also quoted Gomez, Hunt and Lamourex (1999) who suggested that telecentres should take the form of "public-access facilities to provide electronic communications services, especially in marginalized or remote areas where commercial development of ICTs is not prevalent."

Taking all these into consideration, prior to the implementation of the e-Bedian project which was modelled after the famous e-Bario research project a baseline study was conducted. The findings from this study is hoped to put into action, yet another successful, self-sustained rural ICT development project through the set-up of a telecentre.

2. Purpose of This Study

This study is part of a bigger study, which aimed to determine the possibility of setting up a telecentre in Long Bedian. The main study involved collecting important baseline data on the Long Bedian community to prepare a socio-economic profile of the community, as well as to identify the communication pattern, and to establish IT awareness and usage. The baseline study conducted was in tandem with the recommendation provided by Harris, et. al. (2001) to meet the systematic approach identified by the World Bank in introducing ICT to the rural communities to close the digital gap. However, in this paper only the communication pattern is discussed in detail.

The communication pattern and the socio-economic variables obtained from the baseline study will help in planning the development of a telecentre in Long Bedian. The telecentre will play the role of the central communication

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facility and ICT awareness centre for the village. Gomez, et al. (1999) have suggested that a telecentre should provide a combined or integrated ICT based service such as from a basic payphone connection to emails and internet connection and services.

3. Background of Long Bedian

Long Bedian is located in the Apoh Tutoh region of the Baram district, in the Miri Division of Sarawak. The village comprises of 180 houses and has a total population of 1,686 people. There are only two ways to get to Long Bedian from Miri town. The first way is to take an express boat from Kuala Baram, Miri to Marudi, and then transfer to another express boat to Long Lama. The total express boat journey takes about 7 hours. Then from Long Lama, take an hour's drive using a 4-wheel drive (4WD) to Long Bedian.

The second alternative is to take a 4.5 hours drive from Miri, which was just introduced recently. The journey takes about 3.5 hours through the timber logging route, nicknamed 'the bone-shaker route' using a 4WD vehicle. The village functions as a trading centre for the nearby villages particularly for the Penan community. It also provides education and health services to the Long Bedian and Penan community.

4. Demographic Profile of the Long Bedian Respondents

For the purpose of the baseline study, 186 respondents were selected randomly from a population of all the households in the village. This is to ensure the study will have representation across the whole Long Bedian community.

The respondents are made up of various ethnic groups with the Kayan group making up 84.9% of the respondents and the Kelabit as the second biggest ethnic group (6.5%). The other ethnic groups such as Kenyah, Morek, Punan, and other minorities contribute to less than 6% of the respondents. This ratio is in tandem to the community population as a whole.

All of the respondents were Christians. In terms of gender 59.1% of them were men and the remaining were women. More than half of the respondents were between the ages of 31 to 50, while 31.2% were below 30 years of age. The remaining respondents were more than 51 years of age. The mean age of the respondents was 39.6 years which signified that the respondents and community were mainly middle-aged people.

Their education background was spread more or less equally across the spectrum right up to the secondary school.

The respondents were mainly farmers and housewives with a representation of 23.7% and 27.4%, respectively. Business persons, drivers and timber logging workers, each comprised of more than 7% of the respondents. The mean income of the respondents was RM830.20 per month. Nevertheless, more than 43% of the respondents earned less than RM500.00 per month, with 29.6% of them earning less than RM250.00 of monthly income.

5. Information Sources and Channels

The survey also attempted to obtain data regarding the sources and channels for information dissemination, and also the where they come from or sent to. Figure 1 and Figure 2 display the data regarding the sources and channels for the information they obtained.

The main sources of information for the Long Bedian community, according to 92.4% of the respondents, were mainly well-informed relatives whom they might have encountered during their journeys to Miri, Marudi, Kuching or to other nearby communities. This was followed by community leaders (85.5%), such as the village headman, the local political representative, and the pastors whom contributed significantly with government, development, social, spiritual and religious information. Teachers (73.5%) and government officers (67.7%), who were attached to the village, including visiting officers, were the other major sources of information. This is understandable as the teachers and other government officers often travelled in and out of Long Bedian to other towns and cities to attend courses and meetings. It is during these trips that they were able to equip themselves with the information and furnish the community upon their return.

Surprisingly, the grapevine which could be considered as one way of disseminating information was considered the least effective source of information. The remoteness and distance of the village from mainstream development could be a contributing factor for its ineffectiveness.

More than 70% of the respondents had identified community meetings (83.8%), face-to-face (82.8%), and church congregation (73.6%) as the main channels of information dissemination. This in tandem with the choice of sources of information discussed earlier where relatives, community leaders, teacher and government officers were considered as the main sources of information.

Table 1. Demographic characteristic of respondents (n=186)

Variable	Category	Number	Percentage
Race	Iban	5	2.7
	Kayan	158	84.9
	Kelabit	12	6.5
	Kenyah	3	1.6
	Morek	2	1.1
	Punan	2	1.1
	Others	4	2.0
Religion	Christian	186	100
Gender	Male	110	59.1
	Female	76	40.9
Age	30 and below	58	31.2
	31 to 40	50	26.9
	41 to 50	40	21.5
	51 to 60	25	13.4
	61 and above	13	7.0
Average age (Mean)	39.6 years		
Education	Never went to school	52	28.0
	Primary School	47	25.3
	Lower Secondary School	39	21.0
	Upper Secondary School	43	23.1
	University	5	2.7

Variable	Category	Number	Percentage
Occupation	Farmer	44	23.7
	Government employee	8	4.3
	Private sector employee	8	4.3
	Business person	20	10.8
	Labourers/G eneral Workers	1	0.5
	Drivers	14	7.5
	Housewife	51	27.4
	Mechanic	5	2.7
	Tailor	13	7.0
	Timber logging	7	3.8
	Unemployed /retired	4	2.2
	Self employed	2	1.1
	Cook/Chef	5	2.7
	Student	1	0.5
	Contractor	2	1.0
	Others		
Monthly Household Income	RM250 and below	55	29.6
	RM251 to RM500	45	24.2
	RM501 to RM750	20	10.8
	RM751 to RM1000	29	15.6
	RM1,001 and above	37	19.9
Average Income (Mean)	RM830.20		

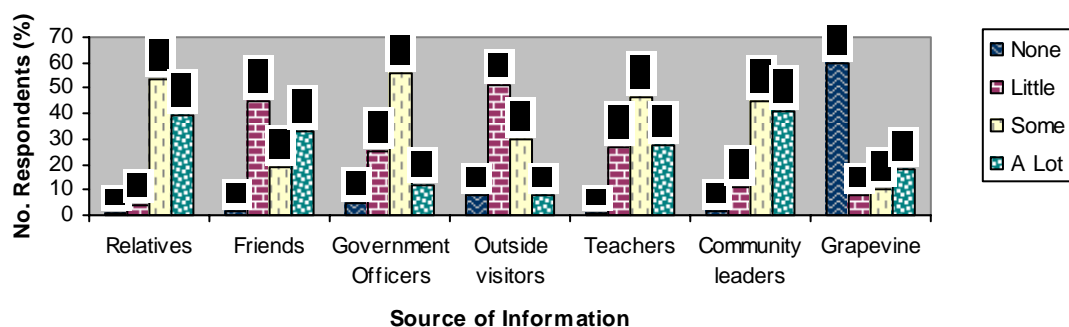


Figure 1. Distribution of respondents by the sources and amount of information they currently received from the sources

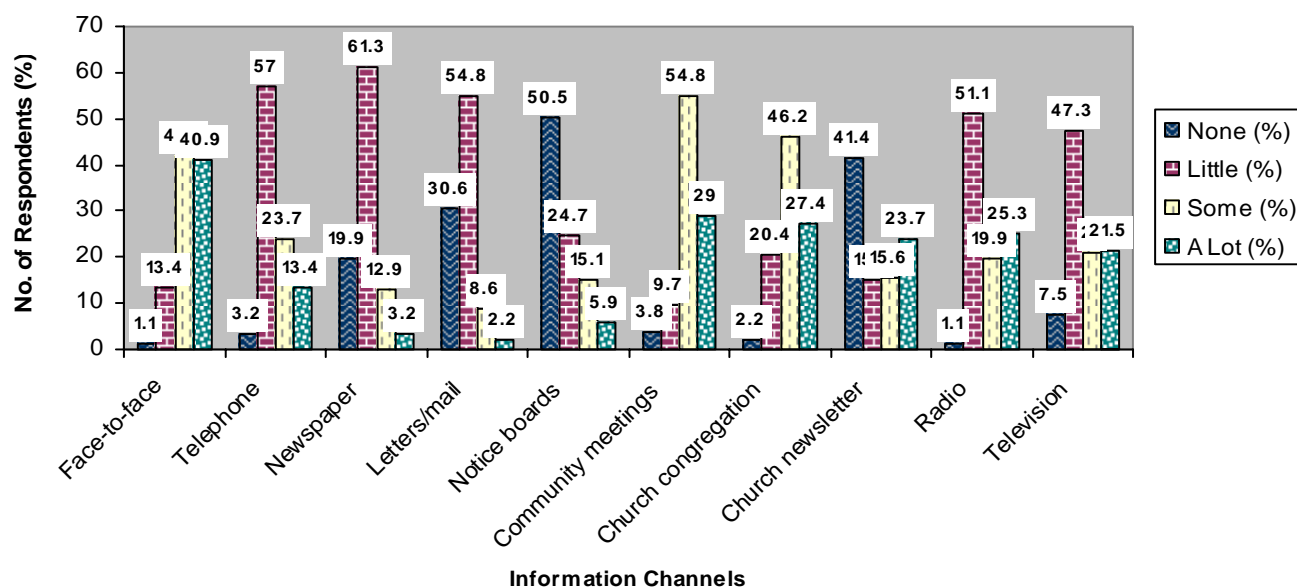


Figure 2. Distribution of respondents by the channels and amount of information they currently received from the sources

The survey revealed that most of the information obtained by the respondents was from Long Bedian itself, or from villages or small townships, such as, Long Lama in the Apoh Kayan region of the Baram district. This information was received mainly through face-to-face communication (89.8%), community meetings (84.5%), church congregation (70.9%), church newsletter (37.1%), the radio (39.2%), and some personally owned mobile phones such as ATUR900 (34.4%). It was also noted that most of the information sent to faraway towns such as Marudi, Miri or other divisions, states or countries, was mainly through face-to-face mode, especially during the times when one of the sources of information visited the recipient in Long Bedian.

Basically, it can be said that the Long Bedian community is an underprivileged community, as far as information dissemination is concerned. The residents do not get to enjoy the benefits of modern information and communication technology to share and disseminate information. Their current main mode of dissemination is still through face-to-face communication and through communal and church meetings and functions.

6. The Information Need and Gap

The researchers also surveyed the types of information that the Long Bedian community had been receiving and were keen on receiving some more. Out of the 12 types of information identified, 6 types of information topped more than 40% in the amount of information received. Religious matters (66.7%) were the highest received information. This is quite understandable as the community is a very committed Christian community. This is followed by information related to agricultural practices and family matters (55.4%),

educational, health and medical (48%), business matters (45%), and government policies (43%). The least received information is in information technology for which only 83.4% of the respondents felt that they received none or very little information on this area.

The survey further exposed that there was a great demand for more information. All categories of information have recorded a high demand of more than 85%. Religious matters still topped the list with 95.2% demand, followed closely by educational matters with 94.1%. Family matters, agricultural practices, medical and health practices, and information technology recorded more than 90% in demand for more information. The least demanded, though still very high in percentage of demand is entertainment related information, which stood at 83.8%.

An analysis of Figure 3 below indicates the amount of information that has been received against the amount of information that was still needed. The gap between the two lines in Figure 3 indicates the difference in the amount of information that the community desires to obtain. Overall, there is an indication that the community would like to receive more information on all the categories that have been identified. The least received information category of information technology has indicated a tremendous rise in its demand with an increase of 86%. Life styles, entertainment, sports and jobs opportunities too have noted an increase in demand by more 80%. This shows that though the community was separated from the modern world by distance and time, they were very keen in keeping up-to-date with information and issues happening in the modern world, particularly in technology and life styles.

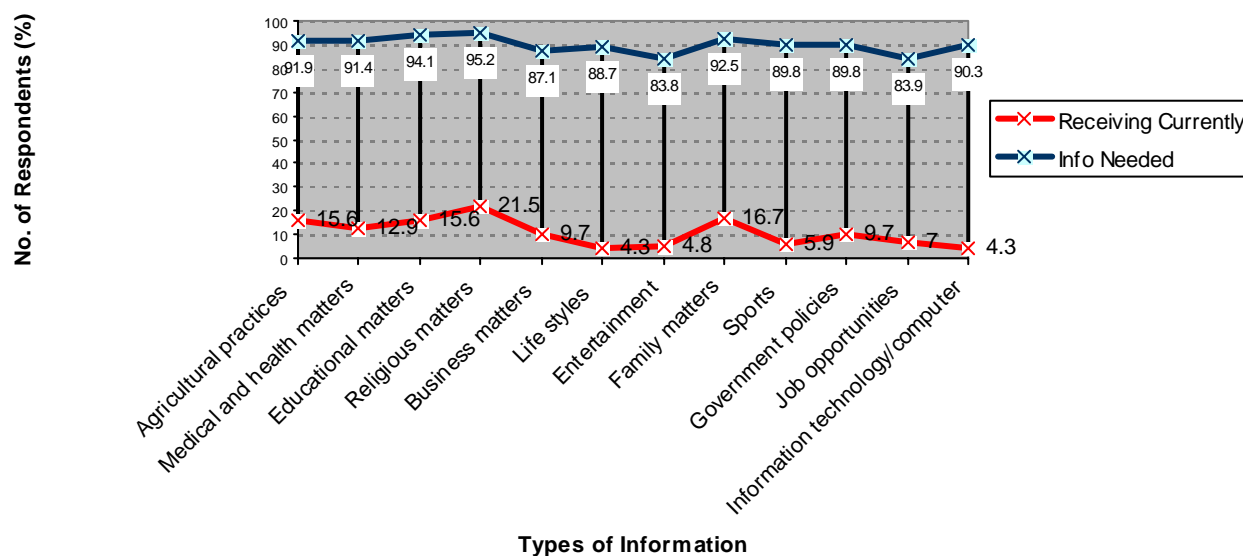


Figure 3. Distribution of information gap for types and amount of information needed by respondents (n = 186)

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7. Recommendations

The data collected from the survey, dialogues and group discussions revealed a few critically needed approach/strategy to help overcome the information and communication barrier of the Long Bedian community. The recommendations do not differ much from the recommendations carried out in the e-Bario project, which are:

1. It is proposed that a centre that facilitates communication with the outside world, as well facilitates the seeking of information and knowledge be set-up. The community sees the need for continuous communication with the outside world, which is nearly non-existent through any other media, besides face-to-face communication. The community also sees the importance of information and knowledge with respect to better their livelihood, standards of living and education.
2. Due to the current communication facility limitation, Long Bedian is literally unknown to the outside world. The community wants to break this barrier, and introduce Long Bedian as a centre for eco, cultural and ethnic

tourism, as well as promote their products. It is hoped that the centre will be able to facilitate and promote Long Bedian in all these aspects.

3. In order to keep up with modernity and technology development, it is proposed that computer and network facilities be established to accomplish the tasks identified in recommendation 1 above.
4. It is also suggested that payphone service be provided at the centre, so that the community could contact anyone outside of Long Bedian or vice-versa. The provision of a payphone service would enable the telecentre to generate some income to sustain itself.

8. Conclusion

This paper has presented and discussed the communication pattern of the Long Bedian community in general, and recommended ways to overcome the challenges encountered. The community is very isolated from all means of modern communication, and information is mainly disseminated through face-to-face communication in communal gatherings and meetings, church activities and functions, through briefings by the community leaders, government servants and teachers, and perhaps by visiting friends, acquaintances and relatives. Very seldom the community obtains or sends information beyond the nearby Apoh Kayan region villages. The community too lacks information related to their livelihood, education, life styles, etc. It is hoped that with the introduction of a telecentre that houses, facilitates and supports the computer system and networking, and the provision of payphone services, the community will be able to communicate extensively and almost immediately, seek information and knowledge globally, as well as promote the village with its tourist attractions.

9. References

- Bala, P., Khoo, G.L., Songan, P., & Harris, R. (2000). Potential users profile and existing communication pattern among the rural community of Bario: A needs analysis for the development of a telecentre. In M. Leigh (Ed.), *Borneo 2000: Politics, history & development* (pp. 626-647). Kota Samarahan, Sarawak, Malaysia: Universiti Malaysia Sarawak.
- Bala, P., Songan, P., Khairuddin Ab. Hamid, Harris, R., & Khoo, G.L. (2002). Bridging the digital divide: the e-bario experience. *Sarawak Development Journal*, 5(1), 63-67. Kuching, Sarawak, Malaysia: Sarawak Development Institute.
- Bala, P., Harris, R.W., & Songan, P. (2003). E Bario project: In search of a methodology to provide access to information communication technologies for rural communities in Malaysia. In S. Marshall, W. Taylor, & Xinghuo, Yu. (eds.), *Using community informatics to transform regions* (pp. 115-131). Hershey, Pennsylvania, USA: Idea Group Publishing.
- Gomez, R.W.W., Hunt, P., & Lamourex, E. (1999). *Telecentre evaluation and research: A global perspective*. International Development Research Centre, Ottawa, Canada.
- Harris, R., Bala, P., Songan, P., Khoo, G.L., & Trang, T. (2001). Challenges and opportunities in introducing information and communication technologies to the Kelabit community of North Central Borneo. *New Media and Society*, 3(3), 271-296. London: SAGE Publications.
- Songan, P., Harris, R., Bala, P., & Khoo, G.L. (2000). Awareness and usage of information technology in a rural community of Bario, Sarawak. In M. Leigh (ed.), *Borneo 2000: Politics, history & development* (pgs. 560-575). Kota Samarahan, Sarawak, Malaysia: Universiti Malaysia Sarawak.